

Appl. No.: 09/875,2374

Amendment dated April 25, 2005

Applicants' Amendment After Final Submitted with RCE

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of the claims in the instant application:

Listing of Claims:

Claim 1 (Currently amended): A polymer derivative comprising a polyalkyleneimine backbone having a number of reactive amino functionalities, each reactive amino functionality having at least one reactive hydrogen atom, wherein from about 20% to about 60% of the number of reactive amino functionalities have a substituent-compound substituted in place of the at least one reactive hydrogen atom, each substituent-compound independently selected from the group consisting of carboxylic acids having from about 14 to about 20 carbon atoms.

Claim 2 (Original): The polymer derivative according to claim 1, wherein the polyalkyleneimine backbone comprises a polyethyleneimine having a molecular weight of from about 400 to about 2500.

Claim 3 (Original): The polymer derivative according to claim 1, wherein the polyalkyleneimine backbone comprises a polyethyleneimine having a molecular weight of from about 1000 to about 1800.

Claim 4 (Original): The polymer derivative according to claim 1, wherein the substituent-compounds selected from the group consisting of carboxylic acids comprise a mixture of two or more C₁₄-C₂₀ carboxylic acids.

Claim 5 (Original): The polymer derivative according to claim 1, wherein each substituent-compound is independently selected from the group consisting of carboxylic acids having from about 16 to about 18 carbon atoms.

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Claim 6 (Original): The polymer derivative according to claim 1, wherein the substituent-compounds selected from the group consisting of carboxylic acids comprise a mixture of two or more C₁₆-C₁₈ carboxylic acids.

Claim 7 (Original): The polymer derivative according to claim 6, wherein the mixture comprises palmitic acid and stearic acid in a ratio of about 50:50.

Claim 8 (Original): The polymer derivative according to claim 1, wherein from about 25% to about 55% of the number of reactive amino functionalities have a substituent-compound substituted in place of the at least one reactive hydrogen atom.

Claim 9 (Original): The polymer derivative according to claim 1, wherein from about 35% to about 45% of the number of reactive amino functionalities have a substituent-compound substituted in place of the at least one reactive hydrogen atom.

Claim 10 (Original): A polymer derivative comprising a polyethyleneimine backbone having a molecular weight of about 1200 and a number of reactive amino functionalities, each reactive amino functionality having at least one reactive hydrogen atom, wherein from about 35% to about 45% of the number of reactive amino functionalities have a substituent-compound substituted in place of the at least one reactive hydrogen atom, each substituent-compound independently selected from the group consisting of carboxylic acids having from about 16 to about 18 carbon atoms.

Claim 11 (Currently amended): A polymer derivative prepared by a process comprising reacting a polyalkyleneimine having a number of reactive amino functionalities with an amount of substituent-compounds comprising one or more carboxylic acids having from about 14 to about 20 carbon atoms, under conditions sufficient to derivatize from ~~about~~ 20% to ~~about~~ 60% of the reactive amino functionalities with the substituent-compounds.

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Claim 12 (Currently amended): A process for preparing a polymer derivative, the process comprising: (a) providing a polyalkyleneimine having a number of reactive amino functionalities per mole, (b) reacting the polyalkyleneimine with an amount of substituent-compounds comprising one or more carboxylic acids having from about 14 to about 20 carbon atoms, wherein the amount of the substituent-compounds used is sufficient to derivatize from about 20% to about 60% of the number of reactive amino functionalities per mole.

Claim 13 (Original): The process according to claim 12, wherein the polyalkyleneimine comprises a polyethyleneimine having a molecular weight of from about 400 to about 2500.

Claim 14 (Original): The process according to claim 12, wherein the polyalkyleneimine comprises a polyethyleneimine having a molecular weight of from about 1000 to about 1800.

Claim 15 (Original): The process according to claim 12, wherein the substituent-compounds comprise a mixture of two or more C₁₄-C₂₀ carboxylic acids.

Claim 16 (Original): The process according to claim 12, wherein the substituent-compounds comprise one or more carboxylic acids having from about 16 to about 18 carbon atoms.

Claim 17 (Original): The process according to claim 12, wherein the substituent-compounds comprise a mixture of two or more C₁₆-C₁₈ carboxylic acids.

Claim 18 (Original): The process according to claim 17, wherein the mixture comprises palmitic acid and stearic acid in a ratio of about 50:50.

Claim 19 (Original): The process according to claim 12, wherein the amount of the substituent-compounds used is sufficient to derivatize from about 25% to about 55% of the number of reactive amino functionalities per mole.

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Claim 20 (Original): The process according to claim 12, wherein the amount of the substituent-compounds used is sufficient to derivatize from about 35% to about 45% of the number of reactive amino functionalities per mole.

Claim 21 (Original): A process for preparing a polymer derivative, the process comprising: (a) providing a polyethyleneimine having a molecular weight of about 1200 and a number of reactive amino functionalities per mole, (b) reacting the polyethyleneimine with an amount of substituent-compounds comprising two or more carboxylic acids having from about 16 to about 18 carbon atoms, wherein the amount of the substituent-compounds used is sufficient to derivatize from about 35% to about 45% of the number of reactive amino functionalities per mole.

Claim 22 (Original): A polymer derivative prepared by the process according to claim 12.

Claim 23 (Original): A polymer derivative prepared by the process according to claim 21.

Claim 24 (Original): A fiber lubricant composition comprising a polymer derivative according to claim 1.

Claim 25 (Original): A fiber lubricant composition comprising a polymer derivative according to claim 10.

Claim 26 (Original): A fiber lubricant composition comprising a polymer derivative according to claim 11.

Claim 27 (Original): A fiber lubricant composition comprising a polymer derivative according to claim 22.

Claim 28 (Original): A fiber lubricant composition comprising a polymer derivative according to claim 23.

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Claim 29 (Original): A method of lubricating a fiber material comprising providing a fiber material and contacting the fiber material with a polymer derivative according to claim 1.

Claim 30 (Original): A method of lubricating a fiber material comprising providing a fiber material and contacting the fiber material with a polymer derivative prepared by the process according to claim 12.